



# SYSTEM AND METHOD FOR NON-CASUAL CHANNEL EQUALIZATION IN AN ASYMMETRICAL NOISE ENVIRONMENT

A system and method are provided for non-casual channel equalization. The method comprises: receiving a non-return to zero (NRZ) data stream input; establishing thresholds to distinguish a first bit estimate; comparing the first bit estimate in the NRZ data stream to a second bit value received prior to the first bit, and a third bit received subsequent to the first bit; in response to the comparisons, determining the value of the first bit; tracking the NRZ data stream inputs in response to sequential bit value combinations; maintaining long-term averages of the tracked NRZ data stream inputs; adjusting the thresholds in response to the long-term averages; and, offsetting the threshold adjustments to account for the asymmetric noise distribution. Two methods are used to offset the threshold adjustments to account for the asymmetric noise distribution: forward error correction decoding or tracking the ratio of first bit "1" and "0" values.